

A Review of *Amoria damonii* GRAY, 1864
and Two New Species Names Proposed for the Homonyms
Voluta bullata SWAINSON, 1829 and *Voluta lineata* LEACH, 1814

(Gastropoda : Volutidae)

BY

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(Plates 52, 53; 1 Map)

DURING THE PAST 125 years various authors have given different scientific names to shells representing widely separated populations of the endemic Australian gastropod mollusk *Amoria damonii* GRAY, 1864, when these populations differed in appearance from GRAY's original figure. We are illustrating GRAY's holotype in Plate 52, Figure 3.

Recently large numbers of *Amoria damonii* have been collected at dozens of localities connecting the once isolated areas. A study of this new evidence shows that the earlier taxa simply represented population variants living along a continuous coastal cline beginning at Thevenard Island, central Western Australia, and extending in a clockwise direction to Cooktown, Queensland. Each population grades into and is replaced by succeeding populations without interruption.

A darkly reticulated color form, similar to the *Amoria damonii* population at Dolphin Island, Dampier Archipelago (Plate 52, Figure 2), was named *Voluta reticulata* REEVE, 1844 (*non* LINNAEUS, 1767 = *Cancellaria reticulata*).

Along the northern Australian coastline, specimens show a gradual color gradation from typical *Amoria damonii* at Broome (Plate 52, Figure 4) to an almost patternless shell found off Port Keats (Plate 52, Figure 6). This lightly patterned color form was given the name *Voluta (Amoria) gatliffi* by G. B. SOWERBY III in 1910. The

name *gatliffi* was preoccupied: it was given by PRITCHARD (1898) to a fossil species of volute in the genus *Livonia* GRAY, 1855; the name, therefore, is a homonym. In any case, SOWERBY's species is synonymous with *A. damonii*. LUDBROOK (1953) described a population with similar markings from off Port Keats, Northern Territory, giving it the name *Amoria (Amoria) keatsiana*. For her holotype LUDBROOK used the same specimen that SOWERBY had used as the holotype for *gatliffi* (Plate 52, Figure 6). However, she provided for future revision by stating: "Two possibilities are presented:

(1) That the species *damoni* is variable in its color pattern in a series of which typical *damoni* and typical *keatsiana* are end members, *keatsiana* thus becoming a synonym;

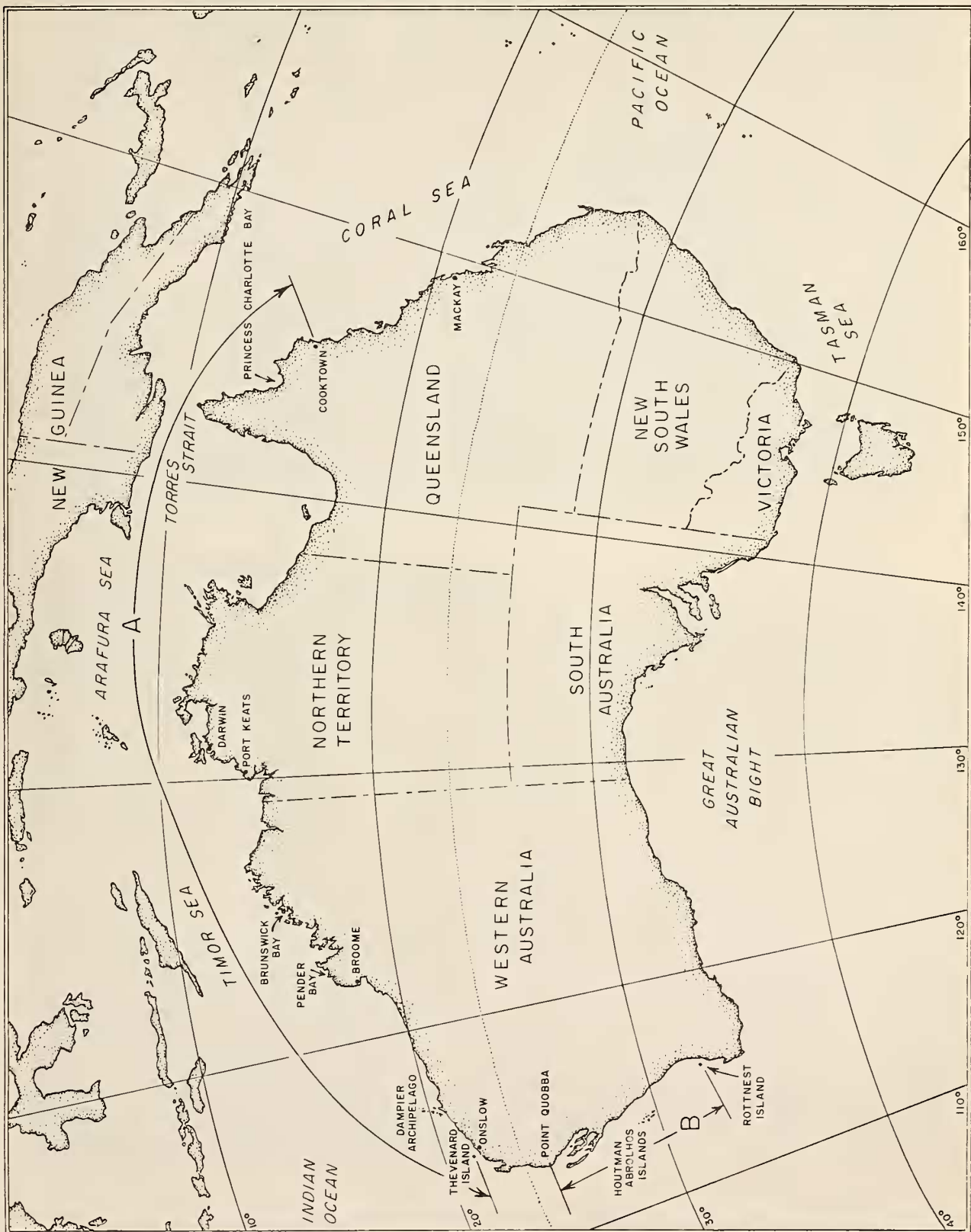
(2) That a cline exists between the two species *damoni* and *keatsiana*. Only a study of considerably more material and more accurate determination of the geographical range of each species will determine which is preferable."

With much more material now at hand than was at LUDBROOK's disposal, we can readily see that a cline does exist and that it does not stop at Port Keats, but continues on to Cooktown, North Queensland. Thus LUDBROOK's *Amoria keatsiana* becomes a synonym of *A. damonii*.

There is a terminal population at the south-western end of the range of *Amoria damonii*, which is isolated from it by a geographical gap. This population was given the name *Voluta reevei* by G. B. SOWERBY II in 1864. We are illustrating the holotype of SOWERBY's species in Figures

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9 and 10, Plate 53. Unless future collecting brings to light intergrading specimens which close this gap, this population can be considered a subspecies of *A. damonii*.

The north-eastern terminal population at Cooktown, Queensland (Plate 52, Figure 8) is not geographically isolated and, as an integral part of the coastal cline, does not deserve subspecific recognition.

Following is a brief outline of the genus and an analysis of the species in question.

Scaphellinae H. & A. ADAMS, 1858

1858. Scaphellinae H. & A. ADAMS, The genera of recent mollusca; London, 2: 619

Amoria GRAY, 1855

1855. *Amoria* GRAY, Proc. Zool. Soc. London 23: 64

Type species: *Voluta turneri* GRAY in GRIFFITH & PIDGEON, 1834; Recent, Australia; by SD of HARRIS, 1897.

(*Amoria*, s. str.)

1855. *Amoria* GRAY, Proc. Zool. Soc. London 23: 64

Amoria (Amoria) damonii damonii GRAY, 1864
(Plate 52; Figures 1 to 8)

1844. *Voluta reticulata* REEVE, Proc. Zool. Soc. London 11: 144 [non LINNAEUS, 1767; non GMELIN, 1791; non REEVE, 1845; non SOWERBY I, 1845]

1845. *Voluta pallida* GRAY. SOWERBY I, Thes. Conch. 1 (5): 196 (pars); plt. 53, fig. 94 [non *pallida* LINNAEUS, 1767]

1855. *Amoria reticulata* GRAY, Proc. Zool. Soc. London 23: 64

1864. *Amoria turneri damonii* GRAY, Ann. Mag. Nat. Hist. 14 (3): 237 (no locality given)

1910. *Voluta (Amoria) gatlifi* SOWERBY III, Ann. Mag. Nat. Hist. 6 (ser. 8): 611; text fig. [non PRITCHARD, 1898]

1914. *Scaphella hedleyi* IREDALE, Proc. Zool. Soc. London, p. 674 [nom. mut. for *Voluta reticulata* REEVE, 1844 (non LINNAEUS, 1767)]

1953. *Amoria (Amoria) keatsiana* LUDBROOK, Proc. Malacol. Soc. London 30: 138; plt. 18, fig. 9

1964. *Amoria damoni damoni* GRAY. WEAVER, Hawaiian Shell News 12 (6): 7; fig. 3

1964. *Amoria damoni damoni* GRAY. WEAVER, Hawaiian Shell News 12 (11): 5; figs. 1 - 5

Holotype: British Museum (Natural History) Number 1862.6.4.1 [LUDBROOK's, 1953, BM(NH) catalogue number is here corrected (Tebble, *in litt.*)].

Type Locality: Designated by LUDBROOK (1953): North of Swan River, Western Australia.

Range: From Thevenard Island, central Western Australia, in a north-easterly direction to Princess Charlotte Bay, north Queensland, a distance of about 3000 miles (see Map). Vertical distribution extends from the littoral to several fathoms.

Shell Description: Coloring and shape of shell vary considerably in individual populations along the 3000 mile coastal range of *Amoria damonii damonii* (Plate 52, Figures 1 - 8); shell large, length at least 123 mm, elongate-ovate with elevated nipple-like spire. Sutures slightly impressed, otherwise shell's exterior smooth. Columella with 4 sharp, oblique plaits.

Color of shells from Broome area: Nucleus white for first 1½ whorls, then fawn with white subsutural line continuing to first postnuclear whorl. Penultimate whorl

Explanation of Plate 52

Dorsal and Ventral Aspects Showing Variation of Color Pattern
in *Amoria damonii damonii* GRAY, 1864, throughout its Range of Distribution.

Figure 1: *Amoria d. damonii* from Thevenard Island, central Western Australia; found buried under sand on exposed sand bar at low tide by C. Weaver.

Figure 2: *Amoria d. damonii* from Dolphin Island, Dampier Archipelago, central Western Australia; found buried under sand on exposed sand bar at low tide by C. Weaver.

Figure 3: Holotype of *Amoria turneri damonii* GRAY, 1864 (= *Amoria damonii damonii*), British Museum (Natural History); no locality given.

Figure 4: *Amoria d. damonii* s. str., from Broome, north Western Australia; collected by A. R. Whitworth.

Figure 5: *Amoria d. damonii* from Brunswick Bay, north Western Australia.

Figure 6: Holotype of *Amoria (Amoria) keatsiana* LUDBROOK, 1953 (= *Amoria damonii damonii*), British Museum (Natural History); taken near Port Keats, Northern Territory.

Figure 7: *Amoria d. damonii* taken by divers in 15 fathoms from Princess Charlotte Bay, North Queensland.

Figure 8: *Amoria d. damonii* taken by Carl Kurtze in 8 fathoms off Dawson Reef, just south-east of Cooktown, north Queensland.

{Figures 3, 6 and 7: © British Museum (Natural History); all others taken by C. Weaver.}

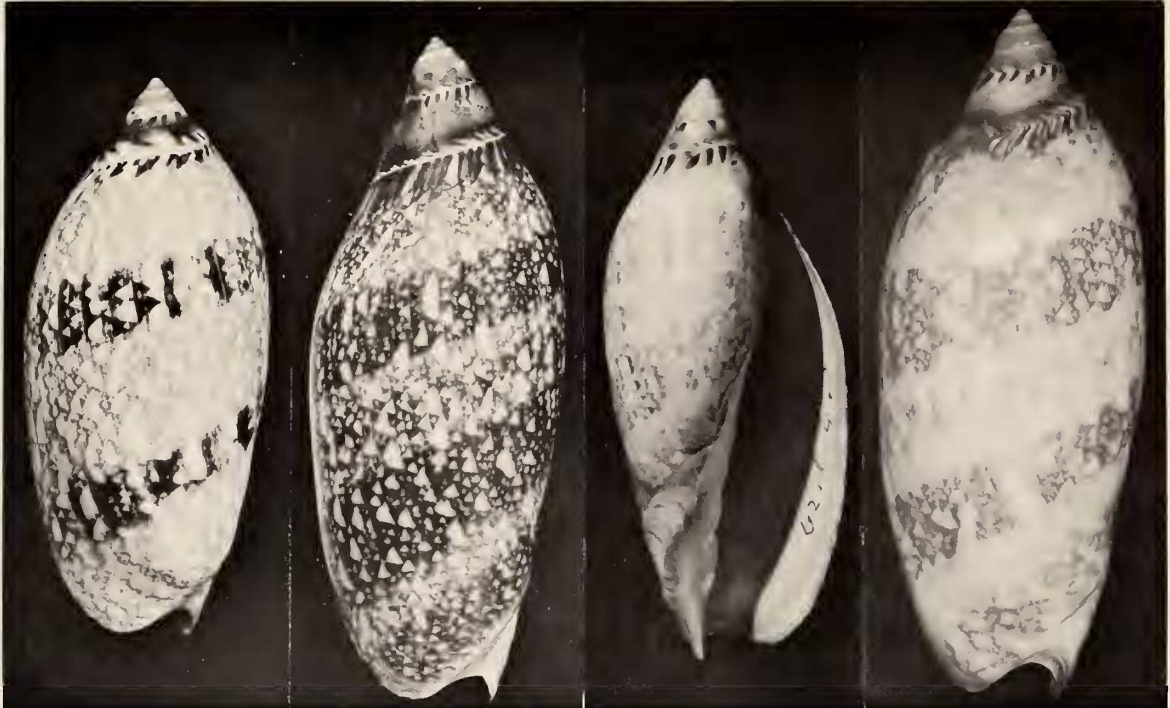


Figure 1

Figure 2

Figure 3

Figure 4

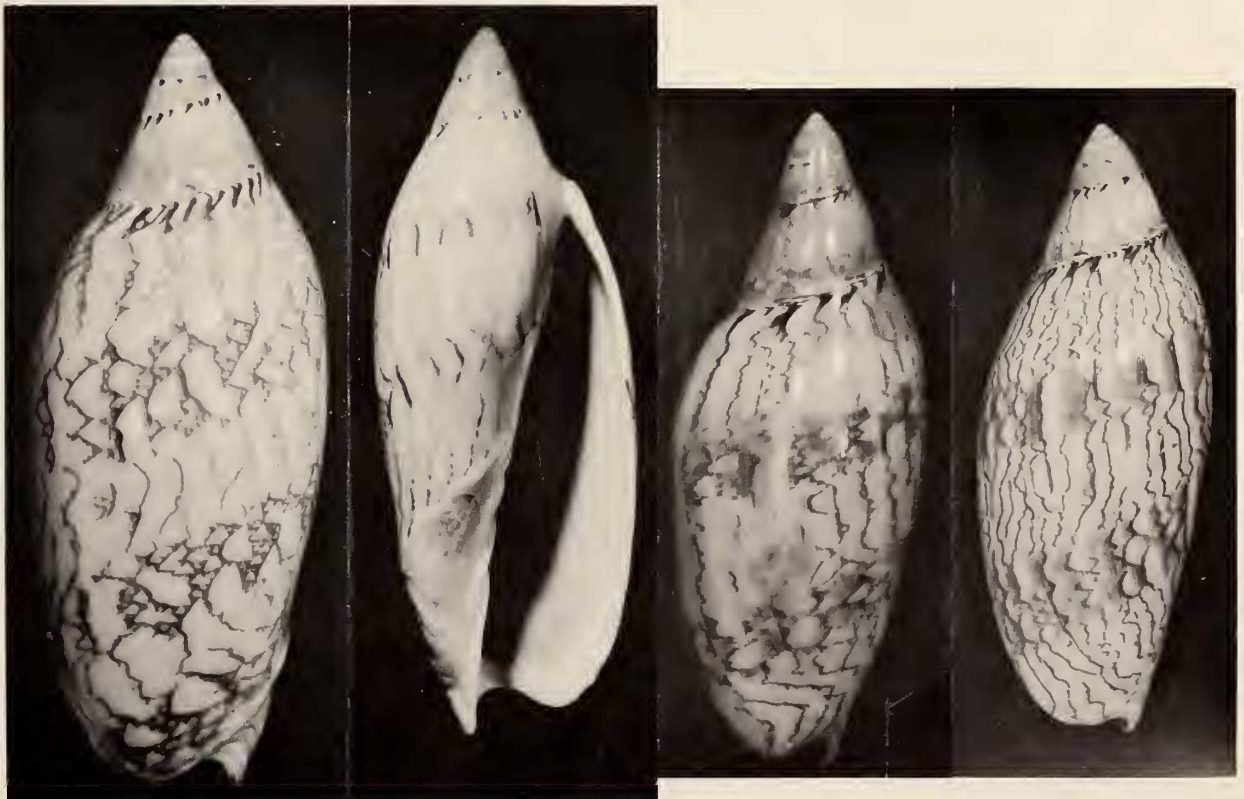


Figure 5

Figure 6

Figure 7

Figure 8



a rich shining chestnut, body whorl cream with 2 or 3 broad revolving bands of fine triangular brown reticulations. Post-nuclear sutures obliquely streaked with darker brown. Aperture a rich coffee color inside, columella white, fasciole bordered with brown.

Amoria (Amoria) damonii reevei (SOWERBY II, 1864)

(Plate 53; Figures 9 - 13)

1845. *Voluta reticulata* REEVE, SOWERBY I, Thes. Conch. 1 (5): 197; plt. 49, figs. 47, 48 [non LINNAEUS, 1767, non GMELIN, 1791; non REEVE, 1844]
 1864. *Voluta reevei* SOWERBY II, Thes. Conch. 3 (23): 269, 1st supp. (Australia)
 1964. *Amoria damoni reevei* SOWERBY II. WEAVER, Hawaiian Shell News 12 (6): 7; fig. 1
 1964. *Amoria damoni damoni* GRAY. WEAVER, Hawaiian Shell News 12 (6): 7; fig. 2

Holotype: British Museum (Natural History) No. 1843.3. 31.6. [LUDBROOK's (1953) BM(NH) catalogue number is here corrected (Tebble, *in litt.*)]

Type Locality: Here designated Rottnest Island, south Western Australia, Long. 115° 30' E; Lat. 32° 00' S, where a number of crab occupied specimens have been taken from craypots (Plate 53, Figures 11, 12) in 20 to 30 fathoms.

Range: From Fremantle north to Point Quobba, a distance of about 550 miles (see Map). Apparently a deep water form.

Shell Description: Shell rather large, with swollen body whorl and low spire producing an inflated appearance. Color pinkish-cream with golden brown reticulations concentrated in two broad spiral bands. In all other respects similar to the nominate subspecies.

Remarks: Although specimens of this rare subspecies from off Point Quobba (Plate 53, Figure 13) tend to approach the form of typical *Amoria damonii damonii* by virtue of their higher spire, no intergrades have been found connecting *A. d. reevei* with the more northerly nominate subspecies. Since there appears to be a geographical gap separating the two subspecies, they are considered separately here.

NEW NAMES PROPOSED FOR TWO HOMONYMS

Several years ago, Mr. Walter Cernohorsky brought to our attention the fact that two long-established names in

Volutidae were homonyms. These names are *Voluta bullata* SWAINSON, 1829, and *Voluta lineata* LEACH, 1814.

Voluta bullata SWAINSON (see Plate 53, Figure 14: holotype) is an east South African volute which GRAY (1847) designated as type species for his monotypic genus *Callipara*. It is regrettable that he did not realize that the name *bullata* was preoccupied in *Voluta* at least 3 times by earlier authors:

1778. *Voluta bullata* BORN, Index Mus. Caes. Vindob., p. 205 [belongs in Marginellidae]
 1791. *Voluta bullata* GMELIN, Syst. Nat., ed. 13, p. 3452, no. 129 [GMELIN cites CHEMNITZ, vol. 10, p. 159; plt. 150, figs. 1409 and 1410, which is *Marginella bullata* (BORN, 1778). He also cites MARTINI, LISTER, KNORR, BUONANNI and BORN, all referring to *Marginella bullata* (BORN, 1778)]
 1828. *Voluta bullata* WOOD, Index Test., 2nd. ed.; plt. 20, fig. 70 [= *Marginella bullata* (BORN, 1778)]

In proposing the following new name for SWAINSON's *Callipara bullata*, we have altered it only enough to make it taxonomically acceptable.

Callipara bullatiana WEAVER & DUPONT, nom. nov.

(Plate 53, Figure 14)

Synonymy: *Voluta bullata* SWAINSON, 1829, Zool. Illustr., vol. 1, ser. 2; plt. 15 (*Voluta* plt. 1) [non BORN, 1778; non GMELIN, 1791; non WOOD, 1828]

Holotype: British Museum (Natural History) No. 1966617 (Plate 53, Figure 14)

Type Locality: Designated by SOWERBY II (1845): Algoa Bay, South Africa.

The second homonym requiring a new name is *Voluta lineata* LEACH, 1814, an eastern Australian volute belonging in the genus *Zebromoria* IREDALE, 1929. The holotype of *Z. lineata* is shown in Figures 15 and 16, Plate 53. The earlier reference invalidating this name is:

1791. *Voluta lineata* GMELIN, Syst. Nat., ed. 13; p. 3454, no. 66 [GMELIN cites MARTINI, vol. 4; plt. 149, figs. 1378 and 1379, which are figures of a *Mitra*]

In proposing a new name for *Zebromoria lineata* (LEACH, 1814), we have followed the same course as with